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SBA

Business Basics

Managing Fixed Assets

A Self-Instructional Booklet
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KEEP THIS GUIDE SHEET -- FOR INSTRUCTOR'S USE ONLY

MANAGING FIXED ASSETS
Instructor's Guide Sheet

This booklet contains:

1. Definition of Fixed Assets
2. Typical Fixed Assets
3. Need for Fixed Assets
4. Problems with Fixed Assets
5. Costs
6. Risks
7. Alternatives to Ownership
8. Fixed Asset Evaluation

Supplementary Instruction

Assist a client, who is making an acquisition decision, do the following:

1. Prepare analysis of incremental sales and costs to determine the expected rate of return or payback period.

2. Establish a suitable target rate of return, considering such questions as alternate uses of capital and economic life of the asset, versus payback period.

3. Project the total amount of the investment in the fixed asset, considering related needs for other assets, such as increased accounts receivable or inventory.

4. Explore options such as leasing, subcontracting, and other alternatives to ownership.

NOTE: Prior to taking this booklet the participant should have completed the introductory bookletin this series, Asset Management.

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INTRODUCTION

Fixed Assets -- What Are They?

From a financial standpoint, fixed assets are defined as tangible property, owned by a business, to be used for a period greater than one year. Typical examples of fixed assets include the following:

- Land acquired for use in operations.
- Buildings purchased to house production or sales facilities.
- Improvements to land or buildings. These include the purchase cost of any long-term improvements to real property whether the property is owned or leased by the business. Typical improvements are paving, renovation, wiring, heating equipment, plumbing, lighting, and so on.
- Machinery and equipment. This includes any machinery or equipment necessary to manufacture your product or to provide the services that you sell. It includes such items as the lathes and drill presses in a machine shop, the cleaning equipment in a dry cleaning shop, the cooking equipment in a restaurant, or the presses in a printer's plant.
- Furniture and fixtures. This includes the desks, chairs, and carpeting in your offices; racks and bins to house your inventory; or shelving to display your merchandise.
- Motor vehicles. Cars driven by your salespeople; a van or truck used for deliveries.

Why Are Fixed Assets Acquired?

Typically, fixed assets are acquired for the following reasons:

- To increase sales.
- To reduce costs.
- Or, simply, to remain in business.

A machine shop may need increased production capacity to meet growth in sales demand. A restaurant may wish to expand its dining area as its popularity grows, or a jewelry shop may wish to improve its appearance to attract more customers.

Insulating a building may reduce energy costs. A conveyor or fork lift may reduce warehouse labor costs, or the purchase of a delivery truck may eliminate the cost of an outside delivery service.

The failure of a critical piece of equipment may require immediate replacement to avoid interrupting an entire manufacturing process. A competitor's modern, high-speed equipment may force you to make a similar investment so that you can provide customers with the same fast service or else face a substantial loss of business. Safety considerations may require the installation of certain equipment to protect workers and customers.

Any of these circumstances could prompt a business to acquire fixed assets. In some examples, the motivation is improved profit through increased sales or reduced costs. In others, the motivation is more basic -- the will to survive, to protect the business you have.

Problems Associated with Fixed Assets

As with any asset, the ownership of fixed assets can tie up your business' capital, creating problems in cash flow so that you are unable to meet obligations to creditors; unable to acquire inventories needed to support sales; or forced to borrow at high interest rates to secure needed cash.

In addition, fixed assets present special problems. By definition, they involve relatively permanent investments. The original money spent to acquire them will not be fully recovered for several years. An error in acquiring merchandise for inventory can often be corrected quickly since the inventory purchase would seldom exceed a few months' supply. Chances are, any excess can be closed out through lower selling prices. However, once a fixed asset has been acquired, the business is normally committed to it for a period of several years. During this period, many conditions can change. Consider the following:

. Obsolescence. The introduction of new, more efficient, or more sophisticated equipment may make your purchase obsolete.

. Market changes. You may purchase a certain fixed asset to meet your customers' requirements. However, their requirements may change or your market may shift so that the fixed asset's usefulness to your business is short-lived.

. Increased costs. Costs such as insurance, maintenance, and utilities associated with the operation of the fixed asset may increase so that it is no longer economical to own and operate.

. Loss on sale. You may be forced to sell the fixed asset long before its expected period of usefulness is over. This can often lead to distress sales because the market for the fixed asset may be sharply limited. Perhaps it was originally designed and acquired to meet your own special needs and has little value to others. Perhaps the introduction of newer, more efficient alternatives makes it a bad buy at any price.

Booklet Objectives

In this booklet you will gain a better understanding of the costs and risks associated with the ownership of fixed assets so that you can avoid many of these pitfalls.

You will learn of alternatives to ownership so that you can reduce your commitment of capital to them and reduce your exposure to many of the risks involved, while still realizing the full usefulness of the assets in operating your business.

Where no realistic alternative to ownership exists, you will learn of methods for acquiring fixed assets at a minimum commitment of your business' capital.

You will learn how to evaluate decisions to acquire fixed assets, taking into consideration all of the relevant income and cost factors that should guide your decision.

Review

Before continuing with this booklet, let us review some of the material that you have seen in this introduction.

NOTE: Cover the correct answers and write your answers on a separate piece of paper (or in the book). Check your answers and review weak areas. Do all the exercises the same way.

1. Tangible property owned by the business to be used for a period greater than one year is considered a _____ asset.

---

fixed

---

2. A fixed asset must be tangible. (TRUE/FALSE)

TRUE

---

3. A fixed asset must be owned by the business. (TRUE/FALSE)

TRUE

---

4. A fixed asset must be used for a period greater than one year. (TRUE/FALSE)

TRUE

---

5. A building that you rent from its owner for use in your business is a fixed asset of your business. (TRUE/FALSE)

FALSE (It is not owned by your business.)

---

6. Your business acquires the exclusive rights to market a certain product in your area for the next 10 years. This right is a fixed asset. (TRUE/FALSE)

FALSE (It is not tangible property.)

---

7. List three principal reasons for the acquisition of fixed assets.

1.
2.
3.

Improve sales.
Reduce costs.
Protect existing business.

---

8. As with any assets, investments in fixed assets can tie up your business' capital. (TRUE/FALSE)

TRUE

---

9. Identify two special problems of investment that are usually far less significant when investing in current assets such as inventories and receivables.

1.
2.

Investments are usually relatively large.

The time period over which the investment is recovered is usually relatively long.

---

10. The time period for recovering your investment in fixed assets is often a problem because, during that period, conditions may _____ from those you originally expected.

---

change

READEX FICHE

11. Identify three conditions that could occur over the life of a fixed asset, endangering your investment in it.

1.
2.
3.

Obsolescence.
Market changes.
Increased costs.
Loss on sale.

(ANY THREE ARE CORRECT)

---

* * * * *

COSTS OF OWNERSHIP

Importance of Understanding Costs

The costs associated with the ownership of fixed assets must be fully understood for the following reasons:

- Evaluation of purchase decisions. The initial decision to purchase any fixed asset requires careful evaluation of all ownership and operation costs so that the wisdom of purchasing the asset may be carefully evaluated. For example, you might be considering a decision to acquire production machinery that will increase your shop's capacity and your sales. To evaluate the wisdom of this decision, you must be able to estimate, with reasonable accuracy, additional income that the added capacity will generate and whether or not this extra income justifies the initial purchase price. Estimating the income potential requires knowledge of the expected increase in sales volume as well as any additional costs that might be incurred as a result of the decision to buy.

  The purchase decision may often involve consideration between alternate pieces of equipment with differing capabilities and costs. The costs and benefits of each must be evaluated to determine which would be more efficient in meeting your needs.

- Evaluation of alternatives to purchasing. Frequently, your business can realize the use and benefits of fixed asset ownership while reducing risks, costs, and your capital commitment. Later in this module, you will explore several of these alternatives.

- Control of costs as the asset is used. As the fixed asset is used in operations, you can compare actual operating costs with your original expectations to measure the effectiveness of your cost control and to see if you are fully receiving the benefits that you anticipated. Are maintenance costs consistent with your original expectations? Have utility requirements increased? Are labor costs consistent with original expectations? Identification of excesses can help you pinpoint areas where costs may be reduced. Or, if the excesses prove only that your original expectations were unrealistic, your actual cost experience can be utilized in future evaluations of fixed asset acquisitions.

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First Cost

The first cost associated with the ownership of a fixed asset is the acquisition cost, the original amount of money paid by your business to acquire the asset. The treatment of the acquisition cost of fixed assets in determining your net income and your income tax obligation differs substantially from that used for most business costs.

Most costs incurred in your business are ordinarily deducted from income in the period when they are acquired or shortly thereafter. Employees' wages and salaries are normally deducted in the period when the employees' services are used or the earnings are paid. The cost of inventory purchases is usually deducted from income when the inventory is sold. In a successful business, this would seldom be more than a few months after the inventory is acquired. Other costs, such as utilities and supplies, are normally deducted from income as they are used and paid for.

However, the purchase cost of fixed assets is deducted over the entire period that the asset is used in operations, not when the asset is acquired. The procedure by which the original cost of the asset is charged to expense is called depreciation.

Depreciation

Most fixed assets tend to lose value with age. Physical wear and tear, obsolescence, loss of market value, and other causes steadily reduce the value of the fixed asset from its original cost as time goes on. This loss of value is called depreciation.

As with all rules, this one has its exception. One fixed asset, land, is not normally "used up," nor becomes obsolete, nor is subject to physical wear and tear. However, all other fixed assets are.

To see how depreciation works, consider the following example:

Assume that a company purchases a machine for $5,000 and expects to use it for 5 years. It estimates that, at the end of the 5-year period, the machinery will have no significant value. Therefore, the entire original cost will be used up over the 5-year period.

In each of the 5 years that the machine is in use, one-fifth of its original cost is charged to depreciation expense. The annual depreciation expense equals $1,000 ($5,000 original cost ÷ 5 years of usage).

To summarize the charges to depreciation expense over the 5-year life, look at the following table.

Year	Depreciation Expense
1	$1,000
2	1,000
3	1,000
4	1,000
5	1,000
TOTAL	$5,000

As the table shows, the entire amount charged to depreciation expense over the 5-year life of the machinery is $5,000, the original acquisition cost. At this point, the machinery is considered fully depreciated. Even if it continues to be used in the business, no further depreciation expense can be charged since the entire original cost has already been expensed.

Balance Sheet Valuation

As the original cost of the machinery is charged to depreciation expense, its valuation on the firm's books, and the owner's investment in it, is reduced accordingly. This reduction in valuation is normally shown on the balance sheet in the account, accumulated depreciation. For example, at the end of the first year, the valuation of the machine shown on the business' books would appear as follows:

Machinery	$5,000
less: Accumulated Depreciation	1,000
Net Book Value	$4,000

The $5,000 amount is the original cost of the machinery.

The accumulated depreciation, $1,000, represents the total amount of the original cost that has been charged to depreciation expense since the asset was acquired.

The net book value is the original cost minus the accumulated depreciation, in this case, $4,000 ($5,000 - $1,000).

During the second year, another $1,000 depreciation expense would be taken and accumulated depreciation would be increased by the same amount. Therefore, at the end of the second year, the accumulated depreciation would be $2,000.

First Year Depreciation	$1,000
Second Year Depreciation	1,000
Accumulated Depreciation (end of second year)	$2,000

At this point, the machinery would appear on the balance sheet as follows:

Machinery	$5,000
less: Accumulated Depreciation	2,000
Net Book Value	$3,000

This procedure would continue in each of the 5 years that the machinery is in service until, at the end of 5 years, the net book value is $0. The net book value of $0 indicates that the entire original cost of the machinery has been charged to depreciation expense and that the owners no longer have any investment in it.

The following table summarizes the annual depreciation expense, the year-end accumulated depreciation, and the year-end net book value for the $5,000 machine with a 5-year expected life.

Year	Original Cost	Depreciation Expense	Year-end Accumulated Depreciation	Year-end Net Book Value (Your Investment)
1	$5,000	$1,000	$1,000	$4,000
2	5,000	1,000	2,000	3,000
3	5,000	1,000	3,000	2,000
4	5,000	1,000	4,000	1,000
5	5,000	1,000	5,000	-0-

* * * * *

1. Identify three reasons why it is important to understand the costs associated with the ownership of fixed assets.

   1.
   2.
   3.

   Evaluate purchase decisions.
   Evaluate alternatives to outright purchase.
   Cost control as the asset is used.

---

2. In determining the net income of a business, the treatment of the acquisition cost of fixed assets is the same as that used for most assets. (TRUE/FALSE)

   FALSE

---

3. The cost of fixed assets is deducted from income:

   a. when the asset is acquired
   b. as the fixed asset is used

---

   b. as the fixed asset is used

---

4. The depreciation expense on a fixed asset in any year represents:

   a. the portion of the original cost used during the year

   b. the cost of maintaining and repairing the asset during the year

   c. the total of installment payments for the year

---

a. the portion of the original cost used during the year

---

5. An office machine costs $2,000 and has an expected useful life of 5 years with no estimated value at the end of the 5-year period. The annual depreciation expense would be $_____.

$400 ($2,000 ÷ 5)

---

6. At the end of the first year, the accumulated depreciation on the office machine would be $_____.
At the end of the second year, it would be $_____.

$400 ($400 x 1)
$800 ($400 x 2 or $400 + $400)

---

7. At the end of the second year, the net book value of the office machine would be $_____.

$1,200 ($2,000 - $800)

---

8. Complete the table below to show how the value of the office equipment would appear on the books of the business at the end of the second year.

Office Equipment	$_____
less: Accumulated Depreciation	$_____
Net Book Value	$_____

Office Equipment	$2,000
less: Accumulated Depreciation	$ 800
Net Book Value	$1,200

---

* * * * *

Residual Value and Economic Life

The examples that you have seen so far assumed that the fixed asset would be used in operations for its entire physical life and that it would have no residual (salvage, scrap, or resale) value at the end of this period.

In practice, these assumptions are frequently not valid. A machine, even when it is no longer operative, could still have value because of the scrap value of its metal content. Air conditioning equipment may have an estimated physical life of 20 years but only be useful in a particular business for a shorter period because the business' requirements may exceed the equipment's long before its physical life expires.

In general, the life of a fixed asset should be considered its economic life, the period for which it will be used in the conduct of the business. Sometimes the economic life will equal the physical life. That is, the fixed asset will be used in the business until it is no longer operational. In other cases, the economic life will be determined by other considerations. For example, if you purchased and installed a vacuum tube system for office space that you leased, the useful life of the system to your business would be restricted to the length of the lease, regardless of the physical life of the equipment. If your lease is 10 years, even an asset with an expected physical life of 30 or 40 years may have no value to you after your lease expires.

The residual value is the value of the asset at the end of its economic life in your business. For some fixed assets, the residual value may be determined by their resale value at that point. Although their economic life, in your business, has fully expired and they are no longer useful to you, they might still be useful to others. For example, a delivery van used by an expensive florist may no longer be consistent with the image of the business after two or three years of use. However, it could still be useful to a messenger service or small contractor.

Assume that the delivery van originally cost $6,000 and is expected to be used for 3 years. At that time, its estimated resale value is $2,400. The annual depreciation expense could then be calculated according to the following formula:

(Original Cost - Residual Value) ÷ Useful Life = Annual Depreciation Expense

($6,000 - $2,400) ÷ 3 = Annual Depreciation Expense

$1,200 = Annual Depreciation Expense

In each year that the florist uses the delivery van, $1,200 is charged to depreciation expense. At the end of the 3-year useful life, the van would appear on the florist's books as follows:

Delivery Van	$6,000
less: Accumulated Depreciation	3,600
Net Book Value	$2,400

At that point, the net book value exactly equals the original estimate of the van's resale value at the end of the 3-year period.

* * * * *

1. The expected resale or scrap value of a fixed asset at the end of its usefulness in your business is called its _____ value.

---

residual (salvage, scrap, resale)

---

2. To determine the annual depreciation expense, you would subtract the estimated residual value from the original cost and divide by:

   a. the expected physical life
   b. the expected economic life

---

b. the expected economic life

---

3. The longest possible economic life for a fixed asset is its _____ life.

---

physical

---

4. If you purchased a wiring installation, with an expected physical life of 25 years, in a building that you leased for 10 years, the economic life of the wiring would be _____ years.

10

---

5. A printing press costs $20,000 and has an estimated useful life of 10 years. The estimated residual value at the end of 10 years is $2,000. The annual depreciation expense would be $_____.

$1,800 ($20,000 - $2,000 = $18,000; $18,000 ÷ 10 = $1,800)

---

6. At the end of 10 years, the accumulated depreciation on the press would be $_____.

$18,000 ($1,800 x 10)

---

7. At the end of 10 years, the net book value of the printing press would be $_____.

$2,000 ($20,000 - $18,000)

---

8. The net book value at the end of an asset's economic life equals the estimate of residual value used to determine the annual depreciation expense. (TRUE/FALSE)

TRUE

---

* * * * *

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Accelerated Depreciation

All of the examples we have used so far have assumed that the business elected to use "straight line" depreciation. In straight line depreciation, the original cost of the fixed asset (less the estimated residual value) is charged to depreciation expense in equal amounts during each year of the asset's economic life. Of the available depreciation methods, straight line depreciation is probably the most commonly used by businesses for maintaining their own financial records and for decision-making purposes.

However, many businesses elect to use accelerated depreciation methods, particularly for income tax purposes. These methods charge relatively more of the asset's original cost to depreciation in the earlier years of its economic life and a lesser portion in later years. Therefore, they are often beneficial from an income tax standpoint. Although the total amount of depreciation expense charged over the entire economic life of the asset is unchanged and, consequently, the total income tax liability over the period is unchanged, the income tax expense is reduced in earlier years so that a portion of the income tax liability is deferred to later years. By postponing a portion of its income tax liability for a few years, the business has free use of the capital for that period.

Accelerated depreciation techniques are permitted by the Internal Revenue Service as an incentive to businesses to invest in fixed assets.

The two most commonly used accelerated depreciation methods are called "the sum of the years' digits" and "double declining balance." These methods will not be covered in this module.

Other Costs

Besides depreciation, which you have just seen, there are several other costs that are often associated with the purchase and operation of fixed assets. These are as follows:

. Interest

. Insurance

. Maintenance

. Local taxes

. Labor

. Utilities

Interest

Many fixed asset acquisitions require the business to borrow to finance the purchase. Interest expense on the amount borrowed must be considered when evaluating a decision to buy. Even when no borrowing is required for direct financing of the purchase, the amount of capital tied up in the purchase may often restrict the firm's cash availability and force it to borrow to meet other needs.

Some businesses may have such a strong cash position that they do not require direct financing to purchase a fixed asset or need to borrow for other purposes. Even in these cases, interest should be considered. The interest cost, in such a case, would be the loss of interest that would otherwise be earned if the business invested the same amount of money elsewhere.

Insurance

The insurance coverage required for any fixed asset varies widely depending upon the nature of the fixed asset. However, in almost all cases, insurance coverage is required for protection from fire and theft losses as well as to protect the business from liability for injury to personnel, customers, or other parties.

Maintenance

Almost all fixed assets require some degree of maintenance and repair. Maintenance can be continuing such as building janitorial services or machinery lubrication, or it can be periodic such as painting a building or overhauling a machine.

Local Taxes

Depending upon the nature of the asset and local tax regulations, fixed assets can be exposed to a variety of local taxes. These include real estate taxes, personal property taxes, or excise taxes. Normally these taxes are based upon the valuation of the asset.

Labor

Besides the earnings of employees required for operation of a fixed asset, the cost of payroll taxes and fringe benefits must be considered. These include such factors as unemployment insurance, workmen's compensation, FICA (social security) contributions by employer, life insurance, pension benefits, vacation pay, and medical benefits.

Utilities

These costs can be particularly troublesome, especially in an era of relative uncertainty about future energy costs. The cost of gas or fuel oil to heat a building, or electricity to drive equipment, can be a significant factor in determining the total costs associated with the ownership and operation of a fixed asset.

Loss on Sale

Frequently, assets must be sold prematurely before they have been fully depreciated. Such sales are often distress sales, since a fixed asset that is useful to your business may be far less useful to any other. For example, equipment designed and constructed to your specifications or renovations to leased office space may have no value to a future occupant. As a result, it is not unusual to incur substantial losses when selling fixed assets.

Even if assets are fully depreciated to their original estimate of residual value, the proceeds realized from their sale upon expiration of their useful life may often be less than originally estimated.

* * * * *

1. The depreciation method that charges the original cost of the asset to expense in equal portions over the economic life of the asset is called _____ depreciation.

---

straight line

---

2. Depreciation methods that increase the proportion of the asset's original cost charged to depreciation expense in the earlier years of its economic life are called _____ depreciation methods.

---

accelerated

---

3. The principal advantage of accelerated depreciation methods is to:

   a. approximate more closely the actual decline in value of the equipment

   b. defer a portion of the firm's income tax liability to later years of the asset's life

---

   b. defer a portion of the firm's income tax liability to later years of the asset's life

---

4. Regardless of the depreciation method selected, the total amount of depreciation charged to expense over the useful life of the asset remains the same. (TRUE/FALSE)

   TRUE

---

5. In which of the following cases should interest be considered as a cost of acquiring a fixed asset?

   a. when the business borrows to finance the purchase of the fixed asset

   b. when the purchase of the fixed asset requires the business to borrow for other purposes

   c. when the business is able to purchase the fixed asset without borrowing for direct financing or borrowing for other purposes

   d. all of the above

---

   d. all of the above

---

6. Why should interest expense be considered when a business does not need to borrow either to purchase the asset or for other purposes?

Because of the loss of interest income that could have been realized by investing the same amount of money elsewhere.

---

7. The cost of maintenance is included in depreciation expense. (TRUE/FALSE)

FALSE

---

8. Besides the effect of physical asset acquisition on income taxes, what other taxes could the acquisition involve?

Local taxes.

---

9. Besides the earnings paid to employees to operate a fixed asset, what other labor-related costs should be considered?

1.
2.

Payroll taxes.
Employee benefits.

---

* * * * *

RISKS OF OWNERSHIP

When a fixed asset is first acquired, it is often difficult to envision the number of problems that can arise during its expected economic life. Any of these problems can lead to unanticipated costs, force disposal of the asset, or jeopardize other aspects of your business. The major risks can be summarized as follows:

- Capital tied up.
- Changing requirements.
- Rising costs.
- Losses on disposal.

Tie-up of Capital

The purchase of an asset requires some immediate commitment of capital, either in whole or in part, depending upon the financial arrangements of the purchase. At the time of acquisition, the business may feel that its commitment is well within its financial capability. However, the passage of time may see the development of other conditions that will force the business to secure additional capital. This additional capital may not have been needed if the fixed asset had not been acquired originally.

When acquiring a fixed asset, many businesses fail to consider related investments in other assets that are required to realize the full utility of the fixed asset purchased. For example, the acquisition of machinery to increase productive capacity and sales might also require increases in your investment in inventory or accounts receivable to support the higher sales level.

Insurance coverage might require the prepayment of a substantial premium to provide coverage for an extended period. Payroll increases to cover operators' earnings, taxes, and fringe benefits, plus the cost of supplies and utilities, might require increased cash balances to maintain a current position with creditors. Foresight in purchase decisions will often permit you to estimate these related asset requirements.

Far more difficult to see, however, is the impact of the purchase upon your cash position in coming years. A cash shortage may occur due to conditions entirely unrelated to the purchase of the fixed asset. Nevertheless, the situation will be aggravated because, to some extent, your capital is tied up in the fixed asset. An economic downturn can lead to operating losses, and slower payments from customers, or your business may be required to take expansion steps that would make better use of your capital than committing it to the acquisition of a fixed asset.

Changing Needs

Perhaps the most common mistake in fixed asset acquisition is the purchase to meet an immediate need which may not be sustained. A contractor buys an expensive piece of construction equipment that will be useful on one current job. A restaurant owner expands to meet the increased demands of a short-lived flurry of popularity. A record shop owner renovates several storefronts when business is booming only to discover later that competition from a local discounter will sharply cut into sales, profit margins, or both. All of these are examples of business owners who made long-term commitments in fixed assets to meet short-term needs. Although it probably could not be foreseen that the needs would exist for only a short period of time, the result is the same. Capital has been committed, extra costs have been incurred, and losses are almost inevitable.

Rising Costs

Fixed assets are acquired with the expectation that they will prove to be profitable. Unfortunately, this is not always the case. If your costs of labor, utilities, taxes, and supplies rise faster than your business' ability to realize higher prices, the resultant profit squeeze will make an apparently sound investment a bad one.

Few, if any, business owners can foresee price changes several years down the road. The oil price increases of the early 1970's were foreseen only by a handful of experts. The small business owner who had invested in fixed assets that were highly dependent upon the availability of reasonably priced fuels was undoubtedly faced with an initial crisis when fuel supplies shrank and a continuing crisis as fuel prices climbed steadily.

Losses on Disposal

A decision to acquire a fixed asset usually involves some estimate of its residual value. Any attempt to forecast a value several years in advance is obviously subject to speculative risk. Reliance upon a relatively high residual value as partial justification for asset acquisition is especially dangerous. Frequently, fixed assets must be sold long before their useful life has expired. A need may develop for larger equipment with more capacity; for modern, more efficient, high-speed equipment; for equipment with sophisticated technical features; or for renovations to meet the changing tastes of the fashion-conscious public. All of these situations can often require that a fixed asset be sold long before it has fully reached its expected useful life in the business.

Frequently, the sale of fixed assets under these circumstances can result in distress prices. The needs of your business may differ sharply from the needs of the prospective purchaser. Modifications made to accommodate your own operation or the layout of your facility may have no value to the prospective buyer regardless of their original cost to you. As a result, you may realize only a fraction of the book value of the asset in such a sale.

The difference between the net book value and the actual proceeds must then be written off as a loss. Such a loss could wipe out the earnings produced by the asset in previous years.

* * * * *

1. Identify the four principal risk factors associated with the ownership of fixed assets:

   1.
   2.
   3.
   4.

Capital tied up.
Changing requirements.
Rising costs.
Losses on disposal.

---

2. When a fixed asset is acquired, the only capital committed is that needed to purchase the asset. (TRUE/FALSE)

FALSE

---

3. A wholesaler of office supplies acquires a small adjoining warehouse to accommodate a new product line. Besides the increased investment in fixed assets, name two accounts that will probably increase as a result of the purchase decision:

1.
2.

Inventory
Accounts Receivable

---

4. If your business is able to pay cash for a fixed asset, there is no reason to be concerned with the capital commitment. (TRUE/FALSE)

FALSE. (Your cash requirement may increase at some later date.)

---

5. Why is a decision to purchase a fixed asset to meet current market conditions often ill-advised?

Conditions may change.

---

6. Purchasing a fixed asset to meet current needs often represents a (LONG/SHORT)-term commitment to meet a _____-term requirement.

LONG
short

---

7. A business decides that the estimated residual value of a fixed asset is sufficient to justify an otherwise marginal investment. Why is such a decision particularly risky?

Because of the uncertainty in forecasting a residual value several years in advance.

---

8. Fixed assets can usually be sold at a profit. (TRUE/FALSE)

FALSE

---

9. The modifications that you require for a fixed asset will usually be equally valuable to a prospective buyer. (TRUE/FALSE)

FALSE

---

10. The gain or loss on the sale of a fixed asset is the difference between the proceeds and the (NET BOOK VALUE/ ORIGINAL COST).

NET BOOK VALUE

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11. The original cost of a fixed asset is $10,000. The net book value of the fixed asset at the time of sale is $5,000. The proceeds from the sale are $2,000. The business has incurred a loss of:

    a. $8,000 ($10,000 - $2,000)
    b. $5,000 ($10,000 - $5,000)
    c. $3,000 ($5,000 - $2,000)

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    c. $3,000 ($5,000 - $2,000)

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* * * * *

ALTERNATIVES TO OWNERSHIP

Many Advantages; Reduced Costs and Risks

Frequently, you can enjoy the advantages of fixed asset ownership while reducing many of the associated costs and risk factors. In particular, the capital requirement for fixed assets can be reduced sharply by minimizing the initial outlay of cash in making the purchase. In this way, cash is conserved to meet current obligations and also to meet future obligations as they arise.

Mortgages

One of the most common methods of financing fixed asset acquisitions is through mortgaging. The buyer of the asset grants a mortgage to the lender, who lends some agreed-upon percentage of the purchase price. In return, the purchaser agrees to repay the lender the principal amount borrowed plus interest on specified payment dates until the entire principal has been repaid.

Mortgage financing usually requires that the borrower pay cash for some percentage of the purchase price. The cash, or down payment, requirement depends upon the nature of the asset, the lender's policies, and the current availability of mortgage financing.

Mortgage financing is generally available from banks for real estate or equipment purchases. Equipment mortgages can also be secured from manufacturers or their financing divisions.

Although a mortgage can sharply reduce the initial capital outlay required, it does not eliminate the cash commitment entirely.

Since you, as the business owner, retain title to the asset, you will also be faced with all of the costs associated with the ownership and operation of the asset as well as the risks inherent in ownership.

Leasing

A lease is an agreement under which property owned by one party, called the lessor, is used by another party, called the lessee. In consideration, the lessee agrees to make periodic payments to the lessor, usually on a monthly basis, for some specified period of time.

The lease duration may be fixed at the time of the initial agreement or it may contain a provision wherein the lessee can cancel the lease by payment of certain penalties. Such agreements, called "escape clauses," reduce some of the inherent risks in long-term commitments.

In the case of a manufacturer's equipment lease, a typical escape clause might be a provision to cancel the existing lease if the lessee agrees to write a new lease for new or larger equipment. Another type of escape clause frees the lessee from the terms of the lease upon forfeiture of any advance payments or security deposit.

A security deposit is normally an amount paid in advance, perhaps equal to two or three months' leasing fees, which protects the lessor from any failure of the lessee to meet all conditions of the lease. These conditions could include the lessee's obligation to make timely payments or to return the property in suitable condition upon expiration of the lease.

The leasing agreement usually details the obligations of both parties. It clearly states those costs that are the responsibility of the lessor and those that will be assumed by the lessee. Frequently, the decision of the lessor to assume certain costs will be ruled by convenience. For example, a lease of office space in a large building may include a provision that heating and lighting costs will be absorbed by the lessor since it could be inconvenient to meter usage by individual tenants.

The leasing agreement may also require the lessee to incur certain costs. For example, the leasing agreement could require the lessee to carry certain insurance coverage as protection for the owner of the property from legal actions brought by employees or customers who might be injured on the premises.

A lease may include tax or labor escalation clauses where the tenant agrees to assume a share of any increased local taxes or maintenance labor costs.

In many leases, the lessor agrees to assume related costs such as maintenance and insurance. While these costs are passed along in the leasing fee, the business avoids the risk of large, unexpected repair costs and can often take advantage of more favorable insurance rates available to large buyers.

All conditions of the leasing agreement must be negotiated and agreed to prior to signing the lease. Once the lease has been signed, both parties have made their commitments and changes can seldom be made unless they are mutually agreeable.

The most important advantage of leasing fixed assets is usually that the initial capital outlay is held to an absolute minimum. Security deposits and advance payments may, in effect, represent a small "down payment," but these are usually small in comparison to the purchasing alternative.

Escape clauses can reduce much of the risk associated with fixed assets, particularly in equipment leases where unexpected increases in equipment requirements could often be handled by taking advantage of any option to terminate the lease and agree to lease larger or more expensive equipment.

Leases with Options to Buy

Many leases provide the lessee with an option to buy the leased property. In such agreements, all or some portion of the lease payments is applied against the purchase price so that the property can be acquired at a steadily declining purchase price as time passes.

In some cases, the option to buy may be exercised at any time; other leases might state that the lessee has the right to buy upon expiration of the lease.

Sale and Leaseback

In some cases, property already owned by the business may be sold to a leasing company which, in turn, will lease the asset back to the business. In such cases, capital already committed to the asset by the business is freed for other purposes.

Subcontracting

Another alternative to the purchase of fixed assets is subcontracting certain requirements to eliminate the need for your business to own, operate, and maintain certain equipment. This is particularly important when the need for equipment is limited to occasional usage or future requirements are uncertain.

Subcontracting is quite common in the printing industry. With a wide variety of presses available, each geared to specific requirements, small printers often find that they do not have sufficient equipment to meet all the needs of their customers. If a customer's needs are not frequent enough to justify purchase of equipment, a printer will often locate another printer who is better equipped to handle the particular job. In this way, the printer retains a customer without making a potentially unwise investment.

* * * * *

1. Mortgage financing of fixed assets usually reduces the business':

   a. initial cash requirement
   b. ownership costs
   c. operating costs
   d. all of the above

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   a. initial cash requirement

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2. Mortgage financing eliminates the need for any cash outlay by the purchaser at the time of acquisition. (TRUE/FALSE)

   FALSE

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3. In mortgage financing, costs of asset ownership and operation are the responsibility of the (BUSINESS/LENDER).

   BUSINESS

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4. In mortgage financing, the business avoids the risks of asset ownership. (TRUE/FALSE)

FALSE

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5. A clause that permits the business to terminate a lease prior to expiration is called a(n) _____ clause.

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escape

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6. An amount paid in advance to the lessor as protection against the failure of the lessee to meet all conditions of the leasing agreement is called a _____ deposit.

---

security

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7. Leases ordinarily require a substantial down payment. (TRUE/FALSE)

FALSE

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8. A lease that gives the lessee the opportunity to acquire the asset at some future date is called a lease with a(n) _____.

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option to buy

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9. An arrangement in which a business sells a fixed asset to a leasing company and then leases the asset from the leasing company is called a _____ _____ agreement.

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sale and leaseback

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10. A business leases a typewriter for a 24-month period for $50 per month. The lease states that the business may acquire the typewriter for $200 upon expiration of the lease. How would you describe this agreement?

    a. sale and leaseback
    b. escape clause
    c. lease with option to buy

---

c. lease with option to buy

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* * * * *

THE ACQUISITION DECISION

Special Nature of Fixed Assets

Most aspects of your business can be closely controlled on a short-term basis from day to day or month to month. On relatively short notice, inventories can be cleared to eliminate excesses or replenished to correct deficiencies. Accelerated collection efforts can reduce problems with excessive receivables.

Fixed assets do not lend themselves so readily to short-term control. Essentially, once a fixed asset has been acquired, your business is committed to it for an extended period. And with this commitment, there are certain associated costs, risks, and uncertainties about the future. Therefore, the key point in controlling your investment in fixed assets is when the purchase decision is made, not several months or several years later.

Advantages of Fixed Asset Investment

Throughout this module, you have seen several negative comments about investment in fixed assets. However, there are certainly occasions when such investments are profitable, particularly if your business is not threatened by a cash shortage. If you operate from leased premises and the property is put on the market, it might profit you to acquire the real estate and take advantage of potential capital appreciation over the years. You can still minimize the commitment of your own cash by taking advantage of available mortgage financing.

Decision Factors

The most important consideration in determining whether or not to buy a fixed asset is to be sure that you buy only what you need. Too often, businesses acquire fixed assets for which they have no continuing use because an immediate need makes the purchase seem desirable. Before making any investment in fixed assets, be sure that the need will continue for an extended period of time. Frequently, you can take intermediate steps such as subcontracting, renting equipment, or leasing to permit business to develop before making a substantial commitment.

Cost and Income Factors

When planning a purchase, evaluate all the cost and income factors associated with the asset. In general, fixed assets are acquired to generate additional sales or to realize cost savings. You should also be certain to consider all other costs associated with the asset besides the purchase price.

For example, a typesetting shop is considering a $10,000 purchase of additional equipment. With this equipment, it expects to realize $20,000 annually in additional sales. On the surface, it sounds like a good investment. However, all of the associated costs must be deducted from the additional sales estimate before the net additional income can be calculated properly.

The cost of additional labor to operate the equipment might be $10,000 annually. If insurance, fringe benefits, payroll taxes, etc., average 25%, then an additional $2,500 must be added.

The cost of materials must also be considered. If this is normally 20% of sales, then there will be an additional $4,000 in materials costs to accommodate the added sales volume.

Insurance on the equipment might be another $500 per year. Local taxes on personal property might add still another $500 per year to the cost.

The additional annual income potential could then be summarized as follows:

Sales		$20,000
Costs:		
Labor	$10,000	
Fringe benefits, taxes, etc.	2,500	
Materials	4,000	
Insurance	500	
Property taxes	500	
Total Costs		17,500
Net Income		$ 2,500

Income vs. Investment

The typesetting shop must now decide whether or not an additional $2,500 per year is sufficient to justify a $10,000 investment. Although a variety of mathematically sophisticated techniques are available to guide such a decision, two relatively simple approaches are often useful. These are determination of the rate of return and the payback period.

Rate of Return

The rate of return is the expected annual net income from the investment expressed as a percentage of the original investment. It is calculated as follows:

Rate of Return = (Net Income ÷ Investment) x 100%

In the example of the typesetting equipment, the rate of return would be calculated as follows:

Rate of Return = (Net Income ÷ Investment) x 100%

Rate of Return = ($2,500 ÷ $10,000) x 100%

Rate of Return = .25 x 100%

Rate of Return = 25%

Payback Period

The payback period is the number of years' net income that are required to recover the initial investment. It is calculated as follows:

Payback Period = Investment ÷ Net Income

For the typesetting equipment example, the payback period would be calculated as follows:

Payback Period = Investment ÷ Net Income

Payback Period = $10,000 ÷ $2,500

Payback Period = 4.0 years

Investment Criteria

The owners of the business must then decide whether a 25% rate of return on a 4-year payback period would be satisfactory.

The rate of return could be compared with alternate investment returns. If the owners' only alternate investment of $10,000 is a savings account, bonds, or other low-yield investment, a 25% rate of return would probably be highly satisfactory.

The payback period should first be compared with the expected useful life of the asset. If the payback period exceeds the useful life, the investment will never be recovered. If it is considerably less, then the investment will be recovered in the early years and produce extra income in the years that follow.

* * * * *

1. The most important time to control your fixed asset investment is:

   a. daily
   b. whenever you review your income statement
   c. when you make a purchase decision

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   c. when you make a purchase decision

---

2. Two approaches for evaluating fixed asset purchase decisions are measuring the rate of _____ and the _____ period.

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   return
   payback

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3. The rate of return expresses the expected net income as a percentage of the _____.

---

original investment

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4. The payback period is the number of years required to recover the _____.

---

original investment

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5. To calculate the payback period on the percentage of a fixed asset, you would divide the _____ by the extra annual income potential.

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original investment

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6. A new machine costs $10,000 and it has a savings potential of $2,000. The payback is _____ years.

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5 ($10,000 ÷ $2,000)

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7. A piece of equipment should save your business $12,000 per year in labor costs, including fringe benefits, taxes, etc. However, you will also incur $2,000 per year in added utilities costs. The extra income potential is $ _____ per year.

$10,000 ($12,000 - $2,000)

---

8. If the machine cost $35,000, the payback period would be _____ years.

3.5 ($35,000 ÷ $10,000)

---

9. A $20,000 investment is expected to produce $4,000 in added annual net income. The rate of return is _____.

20% ($4,000 ÷ $20,000)

---

10. You have a chance to invest $10,000 in either of two pieces of equipment. One has an expected rate of return of 20%. The other has an expected rate of 30%. Chances are, you would invest in the equipment with a _____% rate of return.

30%

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* * * * *

SUMMARY

Day-to-Day Control

As the owner of a small business, you are probably very much on top of your day-to-day operations. When sales dip, you know it immediately and know what to do about it. By observing operations in your business, you know when expenses threaten to get out of hand. You clamp down and reduce them promptly.

Unfortunately, fixed assets do not lend themselves so easily to day-to-day control. Most of the problems associated with fixed assets begin to take shape the day that the asset is acquired. Once you have acquired a fixed asset, you are largely committed to it. The decision is not easily reversed. Certainly, fixed assets can be sold if they prove to be unneeded, but such sales are often unprofitable. A sale and leaseback agreement could free your capital, but if you no longer need the use of an asset, you no longer need it, regardless of the basis on which you use it. Therefore, it is particularly critical that you carefully assess all the costs and risks associated with the commitment before you decide to proceed.

Applying Your Knowledge

In this booklet, you have learned many factors that must be evaluated in making such an important decision. You have learned to recognize the costs related to the ownership and operation of fixed assets so that these can be considered in your purchase decision. You have learned of the risks of fixed asset ownership so that you can better understand the chances you take whenever you invest in them. You have learned of the various alternatives to fixed asset ownership that will still provide your business with many of the benefits of ownership with less capital commitment and, in some cases, reduced risk. You have learned how to evaluate decisions to acquire a fixed asset by comparing the income potential of the proposed investment with the potential of other investment opportunities.

If you apply this knowledge to fixed asset purchase decisions in your own business, you will avoid the often calamitous problems created by poor decisions and enjoy the profit that follows from wise ones.

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